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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
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Application Number	10/004,170	APR 24 2003 Technology Center 2600
Filing Date	October 30, 2001	
First Named Inventor	Louis B. ROSENBERG	
Group Art Unit	2672	
Examiner Name	Jeffery A. BRIER	
Attorney Docket Number		IMMR035/02US

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code ² (if known)		
JB	A1	5,785,630		Bobick, et al.	07/28/1998
	A2	5,766,016		Sinclair et al.	06/16/1998
	A3	5,547,382		Yamasaki et al.	08/20/1996
	A4	5,466,213		Hogan et al.	11/14/1995
	A5	5,334,027		Wherlock	08/02/1994
	A6	5,309,140		Everett, Jr., et al.	05/03/1994
	A7	5,299,810		Pierce et al.	04/05/1994
	A8	5,275,174		Cook	01/04/1994
	A9	5,271,290		Fischer	12/21/1993
	A10	5,240,417		Smithson et al.	08/31/1993
	A11	5,212,473		Louis	05/18/1993
	A12	5,078,152		Bond et al.	01/07/1992
	A13	5,038,089		Szakaly	08/06/1991
	A14	5,035,242		Franklin et al.	07/30/1991
	A15	5,022,407		Horch et al.	06/11/1991
	A16	5,019,761		Kraft	05/28/1991
	A17	4,934,694		McIntosh	06/19/1990
	A18	4,930,770		Baker	06/05/1990
	A19	4,891,764		McIntosh	01/02/1990
	A20	4,794,392		Selinko	12/27/1988
	A21	4,713,007		Alban	12/15/1987
	A22	4,708,656		de Vries et al.	11/24/1987
	A23	4,599,070		Hladky et al.	07/08/1986
	A24	4,581,491		Boothroyd	04/08/1986
	A25	4,513,235		Acklam et al.	04/23/1985
	A26	4,236,325		Hall et al.	12/02/1980
	A27	4,160,508		Salisbury, Jr.	07/10/1979
	A28	3,911,416		Feder	10/07/1975
	A29	3,903,614		Diamond et al.	09/09/1975
	A30	3,902,687		Hightower	09/02/1975
	A31	3,623,064		Kagan	11/23/1971
	A32	3,517,446		Corlyon et al.	06/30/1970
	A33	3,497,668		Hirsch	02/24/1970
JB	A34	3,220,121		Cutler	11/30/1965
JB	A35	3,157,853		Hirsch	11/17/1964

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	T ⁶
		Office ³	Number ⁴	Kind Code ⁵ (if known)			
JB	B1		0 349 086	A1	Stork Kwant B.V.	EPX	01/03/1990

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² See attached Kinds of U.S. Patent Documents.

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⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

⁶ Applicant is to place a check mark here if English language Translation is attached.

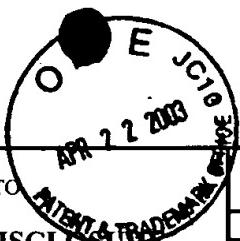
Jeffery A. Brier 11/14/03

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Information Disclosure Statement by Applicant

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				
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				Technology Center 2600
				Jeffery A. BRIER
				IMMR035/02US

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		
	C1	Baigrie, "Electric Control Loading - A Low Cost, High Performance Alternative," <i>Proceedings of Interservice/Industry Training Systems Conference</i> , pp. 247-254, November 6-8, 1990		T ²
	C2	Iwata, "Pen-based Haptic Virtual Environment," 0-7803-1363-1/93 IEEE, pp. 287-292, 1993		
	C3	Russo, "The Design and Implementation of a Three Degree of Freedom Force Output Joystick," <i>MIT Libraries Archives</i> pp. 1-131, May 1990, archived 8/14/90		
	C4	Brooks et al., "Hand Controllers for Teleoperation - A State-of-the-Art Technology Survey and Evaluation," <i>JPL Publication 85-11</i> , NASA-CR-175890; N85-28559, pp. 1-84, 03/1/1985		
	C5	Jones et al., "A perceptual analysis of stiffness," ISSN 0014-4819 Springer International (Springer-Verlag); <i>Experimental Brain Research</i> , Vol. 79, No. 1, pp. 150-156, 1990		
	C6	Burdea et al., "Distributed Virtual Force Feedback, Lecture Notes for Workshop on Force Display in Virtual Environments and its Application to Robotic Teleoperation," 1993 IEEE International Conference on Robotics and Automation, pp. 25-44, 05/02/1993		
	C7	Snow et al., "Model-X Force-Reflecting-Hand-Controller," NT-Control No. NPO-17851; JPL Case No. 7348, pp. 1-4 with 45 pages of attachments, 06/15/1989		
	C8	Ouh-Young, "Force Display in Molecular Docking," Doctoral Dissertation, University of North Carolina at Chapel Hill, UMI Order No. 9034744, p. 1-369, 1990		
	C9	Tadros, "Control System Design for a Three Degree of Freedom Virtual Environment Simulator Using Motor/Brake Pair Actuators," <i>MIT Archive</i> , pp. 1-88, February 1990, archived 8/13/90		
	C10	Caldwell et al., "Enhanced Tactile Feedback (Tele-Taction) Using a Multi-Functional Sensory System," 1050-4729/93, pp. 955-960, 1993		
	C11	Adelstein et al., "Design and Implementation of a Force Reflecting Manipulandum for Manual Control research," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 1-12, 1992		
	C12	Gotow et al., "Controlled Impedance Test Apparatus for Studying Human Interpretation of Kinesthetic Feedback," WAII-11:00, pp. 332-337		
	C13	Stanley et al., "Computer Simulation of Interacting Dynamic Mechanical Systems Using Distributed Memory Parallel Processors," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 55-61, ASME 1992		
	C14	Russo, "Controlling Dissipative Magnetic Particle Brakes in Force Reflective Devices," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 63-70, ASME 1992		
	C15	Kontarinis et al., "Display of High-Frequency Tactile Information to Teleoperators," <i>Telemanipulator Technology and Space Telerobotics</i> , Won S. Kim, Editor, Proc. SPIE Vol. 2057, pp. 40-50, Sep. 7-9, 1993		
	C16	Patrick et al., "Design and Testing of A Non-reactive, Fingertip, Tactile Display for Interaction with Remote Environments," <i>Cooperative Intelligent Robotics in Space</i> , Rui J. deFigueiredo et al, Editor, Proc. SPIE Vol. 1387, pp. 215-222, 1990		
	C17	Adelstein, "A Virtual Environment System For The Study of Human Arm Tremor," <i>Ph.D. Dissertation</i> , Dept. of Mechanical Engineering, MIT, June 1989, archived 3/13/90		
	C18	Bejczy, "Sensors, Controls, and Man-Machine Interface for Advanced Teleoperation," <i>Science</i> , Vol. 208, No. 4450, pp. 1327-1335, 1980		
	C19	Bejczy et al., "Generalization of Bilateral Force-Reflecting Control of Manipulators," <i>Proceedings Of Fourth CISMM-IFTOMM</i> , Sep. 8-12, 1981		
	C20	McAfee et al., "Teleoperator Subsystem/Telerobot Demonstrator: Force Reflecting Hand Controller Equipment Manual," <i>JPL 1988</i> , JPL D-5172		
	C21	Minsky, "Computational Haptics: The Sandpaper System for Synthesizing Texture for a Force-Feedback Display," <i>Ph.D. Dissertation</i> , MIT, June 1995, archived 7/6/95		
	C22	Jacobsen et al., "High Performance, Dextrous Telerobotic Manipulator With Force Reflection," <i>Intervention/ROV '91 Conference & Exposition</i> , Hollywood, Florida, May 21-23, 1991		
	C23	Shimoga, "Finger Force and Touch Feedback Issues in Dexterous Telemanipulation," <i>Proceedings of Fourth Annual Conference on Intelligent Robotic Systems for Space Exploration</i> , Rensselaer Polytechnic Institute, Sep. 30-Oct. 1, 1992		
	C24	IBM Technical Disclosure Bulletin, "Mouse Ball-Actuating Device With Force and Tactile Feedback," Vol. 32, No. 9B, February 1990		
	C25	Terry et al., "Tactile Feedback In A Computer Mouse," <i>Proceedings of Fourteenth Annual Northeast Bioengineering Conference</i> , University of New Hampshire, March 10-11, 1988		
	C26	Howe, "A Force-Reflecting Teleoperated Hand System for the Study of Tactile Sensing in Precision Manipulation," <i>Proceedings of the 1992 IEEE International Conference on Robotics and Automation</i> , Nice, France, May 1992		
	C27	Eberhardt et al., "OMAR - A Haptic display for speech perception by deaf and deaf-blind individuals," <i>IEEE Virtual Reality Annual International Symposium</i> , Seattle, WA, Sep. 18-22, 1993		

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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet

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Technology Center 2600

Application Number	10/004,170
Filing Date	October 30, 2001
First Named Inventor	Louis B. ROSENBERG
Group Art Unit	2672
Examiner Name	Jeffery A. BRIER
Attorney Docket Number	IMMR035/02US

<i>JB</i>	C28	Rabinowitz et al., "Multidimensional tactile displays: Identification of vibratory intensity, frequency, and contractor area," <i>Journal of The Acoustical Society of America</i> , Vol. 82, No. 4, October 1987	
<i>A</i>	C29	Bejczy et al., "Kinesthetic Coupling Between Operator and Remote Manipulator," <i>International Computer Technology Conference, The American Society of Mechanical Engineers</i> , San Francisco, CA, August 12-15, 1980	
	C30	Bejczy et al., "A Laboratory Breadboard System For Dual-Arm Teleoperation," <i>SOAR '89 Workshop, JSC</i> , Houston, TX, July 25-27, 1989	
	C31	Ouhyoung et al., "A Low-Cost Force Feedback Joystick and Its Use in PC Video Games," <i>IEEE Transactions on Consumer Electronics</i> , Vol. 41, No. 3, August 1995	
	C32	Marcus, "Touch Feedback in Surgery," <i>Proceedings of Virtual Reality and Medicine The Cutting Edge</i> , Sep. 8-11, 1994	
<i>JB</i>	C33	Bejczy, et al., "Universal Computer Control System (UCCS) For Space Telerobots," CH2413-3/87/0000/0318501.00 1987 IEEE, 1987	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Jeffrey A. Brier 4/14/03

¹ Unique citation designation number.

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				<i>Complete if Known</i>
Substitute for form 1449A/PTC INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				AUG 19 2003
Sheet	1	of	5	Application Number 10/004,170 Filing Date October 30, 2001 First Named Inventor Louis B. ROSENBERG Group Art Unit 2672 Examiner Name Jeffery A. BRIER Attorney Docket Number IMMR035/02US

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code ² (if known)		
JB		3919691		Noll	Nov., 1975
JB		4398889		Lam et al.	Aug., 1983
		4436188		Jones	Mar., 1984
		4477043		Repperger	Oct., 1984
		4632341		Repperger et al.	Dec., 1986
		4679331		Koontz	Jul., 1987
		4689449		Rosen	Aug., 1987
		4782327		Kley et al.	Nov., 1988
		4800721		Cemenska et al.	Jan., 1989
		4803413		Kendig et al.	Feb., 1989
		4861269		Meenen, Jr.	Aug., 1989
		4868549		Affinito et al.	Sep., 1989
		4896554		Culver	Jan., 1990
		4897582		Otten et al.	Jan., 1990
		5007300		Siva	Apr., 1991
		5044956		Behensky et al.	Sep., 1991
		5062594		Repperger	Nov., 1991
		5065145		Purcell	Nov., 1991
		5076517		Ferranti et al.	Dec., 1991
		5088055		Oyama	Feb., 1992
		5103404		McIntosh	Apr., 1992
		5107080		Rosen	Apr., 1992
		5107262		Cadoz et al.	Apr., 1992
		5116051		Moncrief et al.	May., 1992
		5128671		Thomas, Jr.	Jul., 1992
		5143505		Burdea et al.	Sep., 1992
		5146566		Hollis, Jr. et al.	Sep., 1992
		5184319		Kramer	Feb., 1993
		5185561		Good et al.	Feb., 1993
		5186629		Rohen	Feb., 1993
		5193963		McAfee et al.	Mar., 1993
		5195179		Tokunaga	Mar., 1993
		5264768		Gregory et al.	Nov., 1993
		5296871		Paley	Mar., 1994
		5298890		Kanamaru et al.	Mar., 1994
		5354162		Burdea et al.	Oct., 1994
		5396266		Brimhall	Mar., 1995
		5405152		Katanics et al.	Apr., 1995
		5414337		Schuler	May., 1995
		5451924		Massimino et al.	Sep., 1995
		5512919		Araki	Apr., 1996
		5513100		Parker et al.	Apr., 1996
		5550562		Aoki et al.	Aug., 1996
JB		5565887		McCambridge et al.	Oct., 1996

¹ Unique citation designation number.² See attached Kinds of U.S. Patent Documents.

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Sheet	2	of	5	Application Number	10/004,170
				Filing Date	October 30, 2001
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		Number	Kind Code ² (if known)		
		5570111		Barrett et al.	Oct., 1996
		5576727		Rosenberg et al.	Nov., 1996
		5589828		Armstrong	Dec., 1996
		5589854		Tsai	Dec., 1996
		5591924		Hilton	Jan., 1997
		5596347		Robertson et al.	Jan., 1997
		5623582		Rosenberg	Apr., 1997
		5625576		Massie et al.	Apr., 1997
		5629594		Jacobus	May., 1997
		5631861		Kramer	May., 1997
		5642469		Hannaford et al.	Jun., 1997
		5643087		Marcus et al.	Jul., 1997
		5656901		Kurita	Aug., 1997
		5666138		Culver	Sep., 1997
		5691898		Rosenberg et al.	Nov., 1997
		5701140		Rosenberg et al.	Dec., 1997
		5709219		Chen et al.	Jan., 1998
		5714978		Yamanaka et al.	Feb., 1998
		5721566		Rosenberg et al.	Feb., 1998
		5724558		Svancarek et al.	Mar., 1998
		5731804		Rosenberg	Mar., 1998
		5734373		Rosenberg et al.	Mar., 1998
		5736978		Haser et al.	Apr., 1998
		5739811		Rosenberg et al.	Apr., 1998
		5754023		Roston et al.	May., 1998
		5755577		Gillio	May., 1998
		5767839		Rosenberg	Jun., 1998
		5769640		Jacobus et al.	Jun., 1998
		5781172		Engel et al.	Jul., 1998
		5802353		Avila et al.	Sep., 1998
		5805140		Rosenberg et al.	Sep., 1998
		5808601		Leah et al.	Sep., 1998
		5825308		Rosenberg	Oct., 1998
		5844392		Peurach et al.	Dec., 1998
		5857986		Moriyasu	Jan., 1999
		5877748		Redlich	Mar., 1999
		5889672		Schuler et al.	Mar., 1999
		5914705		Johnson et al.	Jun., 1999
		5944151		Jakobs et al.	Aug., 1999
		5956484		Rosenberg et al.	Sep., 1999
		5959613		Rosenberg et al.	Sep., 1999

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JB		5990869		Kubica et al.	Nov., 1999
		6001014		Ogata et al.	Dec., 1999
		6004134		Marcus et al.	Dec., 1999
		6005551		Osborne et al.	Dec., 1999
		6028593		Rosenberg et al.	Feb., 2000
		6088017		Tremblay et al.	Jul., 2000
		6111577		Zilles et al.	Aug., 2000

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JB		EP.	0265011	A1	Apr., 1988
		EP.	0626634	A2	Nov., 1994
		PCT	WO9502801		Jan., 1995
		PCT	WO9520788		Aug., 1995
		PCT	WO9532459		Nov., 1995

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			
JB		Gotoh, J.K., et al., "Perception of Mechanical Properties at the Man-Machine Interface," IEEE 1987, pp. 688-689.			
		Atkinson, William D. et al., "Computing with Feeling," Comput. & Graphics, vol. 2, No. 2-E, pp. 97-103.			
		Rosenberg, Louis B. et al., "Perceptual Decomposition of Virtual Haptic Surfaces," IEEE Symposium on Research Frontiers in Virtual Reality, Oct. 1993.			
		Rosenberg et al., "Using Force Feedback to Enhance Human Performance in Graphical User Interfaces", www.acm.org/sigchi/chi96/proceedings, Apr. 1996.			
		Ramstein, Christophe, "Combining Haptic and Braille Technologies: Design Issues and Pilot Study", Assets '96, ACM SIGGRAPH, 1996, pp. 37-44.			
		Payette et al., "Evaluation of a Force Feedback (Haptic) Computer Pointing Device in Zero Gravity," DSC--vol. 58, Proc. of the ASME Dynamics Systems and Control Div., ASME 1996, pp. 547-553.			
		Rosenberg, Louis, "The Use of Virtual Fixtures to Enhance Operator Performance in Time Delayed Teleoperation," Armstrong Lab., Crew Systems Directorate, 1993, pp. 1-45.			

¹ Unique citation designation number.

² See attached Kinds of U.S. Patent Documents.

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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
				Ramstein et al., "The Pantograph: A Large Workspace Haptic Device for a Multimodal Human-Computer Interaction," Computer-Human Interaction, CHI '94.	
				Millman et al., "Design of a Four Degree-of-Freedom Force-Reflecting Manipulandum with a Specified Force/Torque Workspace", Proc. of 1991 IEEE Int'l Conf. on Robotics and Automation, IEEE, 1991, pp. 1488-1493.	
				Ouh-young, Ming, "Using a Manipulator for Force Display in Molecular Docking," IEEE CH2555-1, 1988, pp. 1824-1829.	
				Winey III, Calvin, "Computer Simulated Visual and Tactile Feedback as an Aid to Manipulation and Vehicle Control," MIT, 1981, pp. 1-79.	
				Howe, Robert D. et al., "Task Performance with a Dextrous Teleoperated Hand System," Proceedings of SPIE, vol. 1833, 1992, pp. 1-9.	
				Kotoku, T. et al., "Environment Modeling for the Interactive Display used in Telerobotic Systems", IROS '91, IEEE Cat. No. 91 Th0375-6, 1991, pp. 999-1004.	
				Batter et al., "Grope-1: A Computer Display to the Sense of Feel," Proc. IFIP Congress 1971, pp. 759-763.	
				Ouh-young, Ming, "Force Display in Molecular Docking," Univ. of North Carolina at Chapel Hill, 1990, pp. 1-12, 66-85.	
				Tan, H. et al., "Manual Resolution of Compliance when Work and Force Cues are Minimized," DSC--vol. 49, ASME 1993, pp. 99-104.	
				Russo, Massimo, "The Design and Implementation of a Three Degree-of-Freedom Force Output Joystick," 1990, pp. 1-40.	
				Rosenberg, Louis, "Virtual Haptic Overlays Enhance Performance in Telepresence Tasks," Stanford Univ., 1994.	
				Adachi, Y., et al., "Sensory Evaluation of Virtual Haptic Push-Buttons," Technical Research Center, Suzuki Motor Corp., 1994.	
				Su, Augustine et al., "The Virtual Panel Architecture: A 3D Gesture Framework" IEEE 4-7803-1363-1, 1993, pp. 388-393.	
				Buttolo, Pietro et al., "Pen-Based Force Display for Precision Manipulation in Virtual Environments," IEEE 0-8186-7084-3, 1995, pp. 217-224.	
				Ellis, R.E. et al., "Design and Evaluation of a High-Performance Prototype Planar Haptic Interface," DSC--vol. 49, ASME 1993, pp. 55-64.	
				Hasser, Christopher, "Tactile Feedback for a Force-Reflecting Haptic Display," Univ. of Dayton, 1995, pp. 1-65.	
				Rosenberg et al., "Commercially Viable Force Feedback Controller for Individuals with Neuromotor Disabilities," Armstrong Lab., Crew Systems Directorate, 1996, pp. 1-33.	
				Repperger, D.W., "Active Force Reflection Devices in Teleoperation," IEEE Control Systems, 0272-1708, 1991, pp. 52-55.	
				Akamatsu, M. et al., "Multimodal Mouse: A Mouse-Type Device with Tactile and Force Display," Presence vol. 3, Winter 1994, pp. 73-80.	
				Munch, Stefan et al., "Intelligent Control for Haptic Displays," Eurographics '96, vol. 15, No. 3, 1996, pp. C-217-C226.	
				Hannaford, B. et al., "Performance Evaluation of a Six-Axis Generalized Force-Reflecting Teleoperator," IEEE 0018-9472, 1991, pp. 620-623, 631-633.	
				Colgate et al., "Implementation of Stiff Virtual Walls in Force-Reflecting Interfaces," Northwestern Univ., IL, Sep. 22, 1993.	
				Adelstein et al., "Design and Implementation of a Force Reflecting Manipulandum," NASA Ames Research Center, 1992, pp. 1-24.	
				Minsky et al., "Feeling and Seeing: Issues in Force Display", Association for Computing Machinery, 1990, pp. 235-242.	
				Tan et al., "Human Factors for the Design of Force-Reflecting Haptic Interfaces," ASME WAM 1994, pp. 1-11.	
				Fischer et al., "Specification and Design of Input Devices for Teleoperation", IEEE Conference on Robotics, 1990, pp. 540-545.	
				Schmult et al., "Application Areas for a Force-Feedback Joystick", ASME 1993, pp. 47-54.	
				Hannaford, B. et al., "Force-Feedback Cursor Control," NASA Tech Brief, vol. 13, No. 11, Item #21, 1976, pp. 1-4.	

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Substitute for form 1449A/PTC INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				<i>Complete if Known</i>	
Sheet	5	of	5	Application Number	10/004,170
				Filing Date	October 30, 2001
				First Named Inventor	Louis B. ROSENBERG
				Group Art Unit	2672
				Examiner Name	Jeffery A. BRIER
				Attorney Docket Number	IMMR035/02US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS					
<i>JB</i>		Kelley, A.J. et al., "On the Development of a Force-Feedback Mouse and Its Integration into a Graphical User Interface," Symp. on Haptic Interfaces for Virtual Environment and Teleoperator Systems, 1994 Int'l Mech. Eng. Congress and Exhibition, 1994, pp. 1-8.			
<i>JB</i>		Rosenberg, "Perceptual Design of a Virtual Rigid Surface Contact", Center for Design Research, Stanford University, Armstrong Laboratory, Crew Systems Directorate, Apr. 1993, pp. 1-42.			
<i>JB</i>		Kelley, A.J. et al., "MagicMouse: Tactile and Kinesthetic Feedback in the Human Computer Interface using an Electromagnetically Actuated Input/Output Device," Dept. of Electrical Engineering, Univ. of British Columbia, 1993, pp. 1-27.			
<i>JB</i>		Kilpatrick, Paul, "The Use of a Kinesthetic Supplement in an Interactive Graphics System," Univ. of N. Carolina at Chapel Hill, Computer Science, 1976, pp. 1-175.			
<i>JB</i>		Hirota, K. et al., "Development of Surface Display," Dept. of Mechano-Informatics, Univ. of Tokyo, IEEE 0-7803-1363-1/93, pp. 256-262.			
<i>JB</i>		Iwata, H. et al., "Artificial Reality with Force-feedback: Development of Desktop Virtual Space with Compact Master Manipulator," Computer Graphics, vol. 24, No. 4, 1990, pp. 165-170.			
<i>JB</i>		Wiker, Steven et al., "Development of Tactile Mice for Blind Access to Computers: Importance of Stimulation Locus, Object Size, and Vibrotactile Display Resolution," Proc. of the Human Factors Society 35.sup.th Annual Meeting, 1991, pp. 708-712.			
<i>JB</i>		Ouh-young, "Creating an Illusion of Feel: Control Issues in Force Display," Computer Science Dept., Univ. of N. Carolina at Chapel Hill, 1989, pp. 1-14.			
<i>JB</i>		Hayward, Vincent et al., "Design and Multi-Objective Optimization of a Linkage for a Haptic Interface," Advances in Robot Kinematics and Computationed Geometry, 1994, pp. 359-368.			

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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